

Fig. 1.—Inflorescence diagrams of *Alectra* and *Pseudomelasma*: A, *A. sessiliflora*; B, *A. fruticosa*; C-E, *P. pedicularioides*.

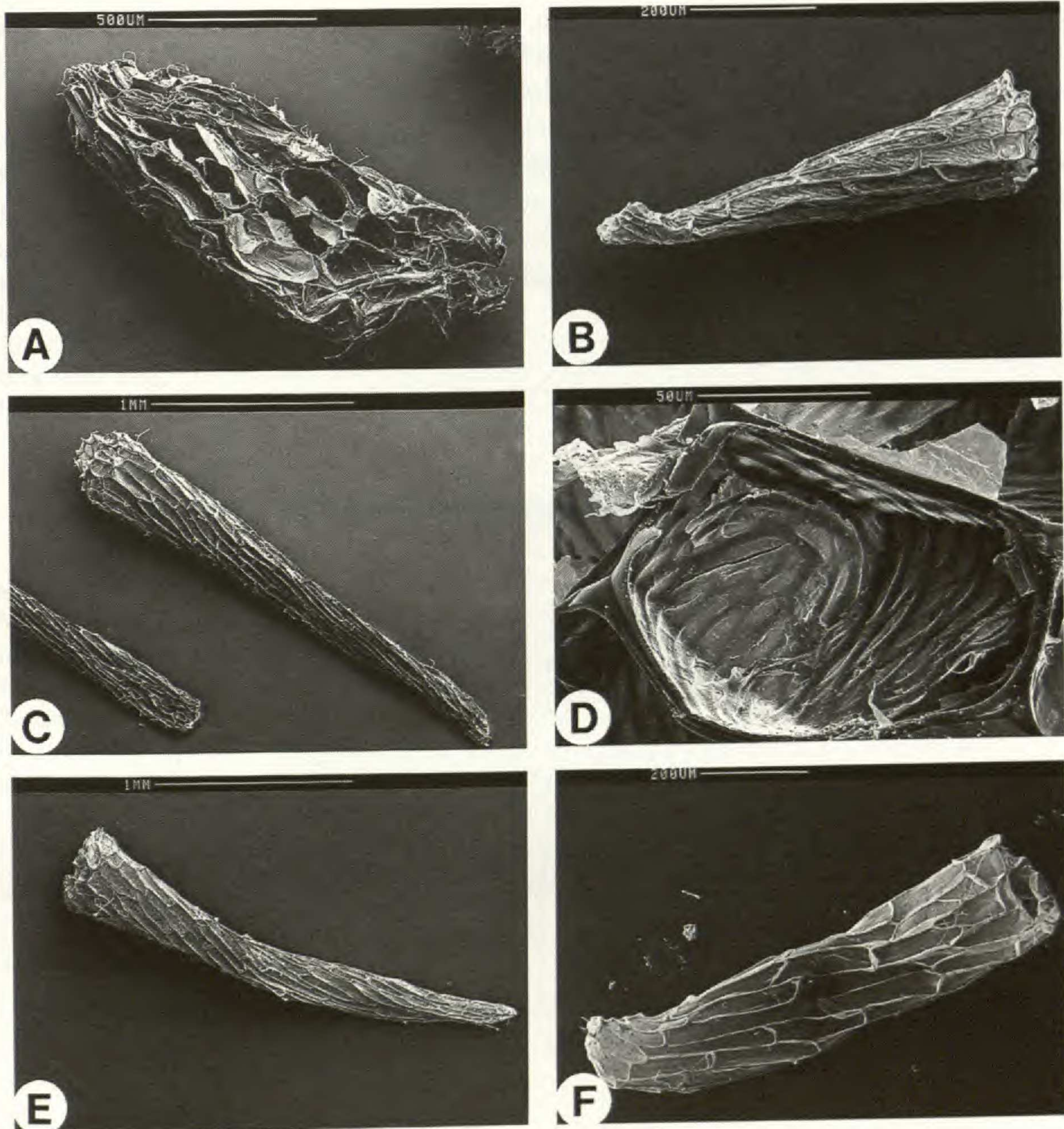


Fig. 2.—Seeds of *Pseudomelasma* and *Alectra*: A, *P. pedicularioides*; B, *A. humbertii*; C-E, *A. fruticosa*; F, *A. sessiliflora*. A from *Humbert 3644*, B from *Viguiet & Humbert 1705*; C-E from *Humbert 22667*; F from *Fischer 410*.

where 3 species are endemic (PHILCOX 1990). Of these 3 species, 2 are restricted to northern Zambia (PHILCOX 1987). Namibia and South Africa possess about 12 species of which 8 are probably endemic.

In Madagascar 5 species occur, 4 of which are true endemics. Interestingly, the only fruticose species of *Alectra* has evolved here.

Outside Africa, one widespread species, *A. sessiliflora*, also occurs in South East Asia. In South America, 2-3 species are recorded.

Judging from this picture, which, of course, is not yet complete, the center of taxonomic diversity for *Alectra* appears to be Southern Africa. Madagascar, however, shows much more diversity in growth forms. Except for *A. sessiliflora*, all species seem to be restricted to small areas. *Alectra fruticosa* is \pm restricted to the Marojejy massif in northern Madagascar, which is famous for its high degree of endemism (HUMBERT 1955) and only one locality is known in South-East Madagascar. *Alectra ibityensis* is known from the quartzitic Ibity and Itremo massifs, and *A. hildebrandtii* and *A. humbertii* both occur within a small range in the central highlands. The monotypic *Pseudomelasma* seems to be restricted to the granitic Ankaratra and Andringitra mountains.

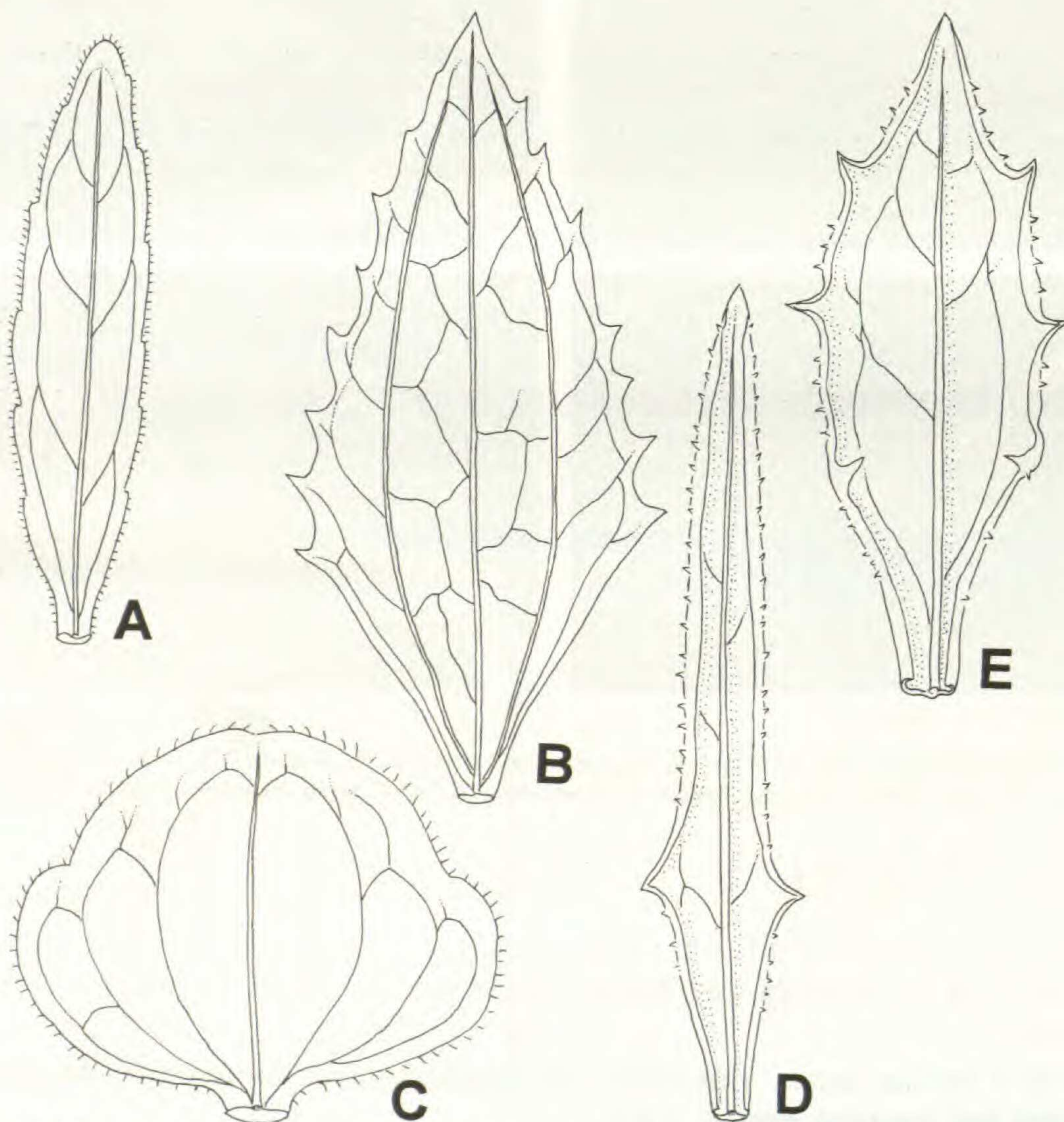


Fig. 3.—Leaves of *Alectra*: A, *A. hildebrandtii*; B, *A. sessiliflora*; C, *A. ibityensis*; D, *A. humbertii*; E, *A. fruticosa*. A from Hildebrandt 3871; B from Fischer 410; C from Fischer 54; D from Viguier & Humbert 1705; E from Humbert 22667.

SYSTEMATIC TREATMENT

Generic key

1. Plants ± large, up to 60(150) cm tall, annual or suffruticose, inflorescence not proliferating, with a leafy hypotagma, flowers with short (1-12 mm) pedicels, calyx not enlarging in fruit, style and stigma recurved, seeds narrowly lanceolate **Alectra**
- 1'. Plants dwarf (5-9 cm tall), suffruticose, the inflorescence proliferating after anthesis with leafy shoots, flowers with long (18-38 mm) pedicels, calyx enlarging in fruit, style and stigma not recurved, seeds ovate **Pseudomelasma pedicularioides**

Key to the Malagasy species of *Alectra*

1. Plants suffruticose, up to 150 cm tall, flowers red with yellow mouth, corolla 18.5-19 mm long, leaves with distinct petiole, 4-5 mm long, in montane forests of NE Madagascar (Marojejy) .. **A. fruticosa**
- 1'. Plants herbaceous, up to 60 cm tall, flowers yellow with darker veins, corolla up to 14 mm long, leaves sessile to subsessile, petiole 2-3 mm at maximum, in grassland and grassy areas within forests.
 2. Leaves orbicular, obtuse, only slightly longer than wide, Ibity and Itremo mountains **A. ibityensis**
 - 2'. Leaves linear, linear-lanceolate to ovate, at least 2-3 times longer than wide.
 3. Leaves linear, 25-42 × 2-4 mm, about 10 times longer than wide, calyx glabrous **A. humbertii**
 - 3'. Leaves lanceolate to ovate, about 3-5 times longer than wide, calyx pilose at least on sepal margin.
 4. Leaves lanceolate, obtuse, 16-23 × 4-5 mm, inflorescence lax, anthers with obtuse thecae **A. hildebrandtii**
 - 4'. Leaves ovate, acute, 25-40 × 8-17 mm, inflorescence dense, anthers with apiculate thecae **A. sessiliflora**

Alectra sessiliflora (Vahl) Kuntze

Rev. Gen. Pl. 2: 458 (1891).

Gerardia sessiliflora Vahl, Symb. Bot. 3: 79 (1794).

Alectra melampyroides Benth. in DC., Prodrum 10: 339 (1846).—Type: *Drège s.n.*, South Africa, Natal (holo-, K).

Alectra communis Hemsley, Flora Tropical Africa 4, 2: 372 (1906).—Type: *Buchanan 520*, Malawi, s.loc., 1891 (lecto-, K; isolecto-, BM).

Alectra rupestris Bonati, Bull. Soc. Bot. France 74: 96 (1927), nom. nud.

Alectra senegalensis var. *pallescens* Bonati, Bull. Soc. Bot. France 74: 96 (1927), nom. nud.

Alectra madagascariensis Bonati, nom. in sched.

Alectra principis Bonati, nom. in sched.

Alectra ramosa Bonati, nom. in sched.

Alectra stricta Bonati, nom. in sched.

TYPE.—From South Africa (not seen).

Erect annual herb, 15-40(60) cm tall, stems simple or branched with 2-3 pairs of paracladia, hispid with retrorse hairs. Leaves sessile, subsessile to shortly petiolate, opposite, alternate within inflorescence, linear-ovate to broadly or narrowly lanceolate, 14-30(55) × 8-18(28) mm, subentire or crenate to coarsely toothed, acute, cuneate, rounded to cordate at base, appressed to subappressed to spreading, hispid to subglabrous, petiole 2-3 mm long.

Inflorescence a dense raceme, bracts leaf-like (frondate to frondobracteate), the lower pair 17-19 × 7-12 mm. Pedicels 0.5-1.5 mm long. Bracteoles linear, equalling or slightly shorter than calyx, hairy ciliate to glabrous. Calyx (6)8.5 mm long, glabrous to ciliate on nerves and margins of lobes, calyx tube 4-5 mm long, free sepal lobes 3.5-4.5 mm long, subequal, triangular, acute. Corolla yellow to dark orange, with reddish-purple venation, 13-14 mm long, corolla tube 9.5 mm long, free petals 4 mm long. Stamens unequal, longer abaxial filaments bearded, 6.5 mm long, anthers with 1.6 mm long thecae, adaxial filaments 4 mm long, with 1.4 mm long thecae, anther thecae apiculate. Ovary 2.5-2.8 mm long, style and stigma clavate, horseshoe-like recurved, 8-8.5 mm long, included in the corolla.

Capsule spherical, 5.5 × 5.5 mm long.

Marshes, swamps and wet grassland. A widespread species known from West and Central Africa, Sudan, Ethiopia, East Africa, South East Africa, South Africa, Madagascar and Mauritius to India, Burma, Thailand, the Philippines, Taiwan and China. HEPPEL (1960) distinguished 3 varieties which, however, all display intergradations, and are therefore not recognized in this revision. For Madagascar, material is known that would correspond to *A. sessiliflora* var. *monticola* (Engler) Melchior and var. *sessiliflora*.—Fig. 2, 3, 4, 10.

MATERIAL STUDIED.—*Académie Malgache s.n.*, W et NW, X.1904 (P); *Baron 1570*, Central Madagascar (K); 2255, *ibid.* (P); 5250, *ibid.* (P); 5555, NW Madagascar (K); 5665, NW Madagascar (K); 6506, N Madagascar (K); *Beaujard 199*, Fort-Carnot, région Tanala, 1986 (P); *Benoist s.n.*, Manjakatempo, 18.XII.1950 (P); 905, Tsimbazaza, 7.V.1951 (P); *Bernier 199*, Ste Marie, 1834 (P); *Boivin s.n.*, Ste Marie, 1850 (P); *s.n.*, *ibid.*, 1854 (BM); 81, Grande Comore, 1850 (P); *Bosser 18769*, col des Tapias, 45 km d'Ambositra, XII.1963 (P); *Bowles 46*, *s.loc.*, *s.d.* (K); *Catat 429*, Ankisatra, V.1889 (P); *Cours 1038*, Sasamanga, Onibe, XI.1938 (P); 3609, Ambodihassina, 14.XII.1950 (P); 5206, Antamboara, distr. Midongy du sud, massif de l'Ivakoany, montagne Analanavelo, *s.d.* (P); *Cowan s.n.*, Ankafana, 1880 (BM); *d'Alleizette 184m*, Namisana, VII.1905 (P); *Decary 3886*, Vanganidrano, 12.VI.1925 (P); 3933, Fenoarivo, 30.IV.1926 (P); 4608, Befotaka, piste de Farafangana, 9.VIII.1926 (P); 7546, vallée de l'Ikopa, au NW d'Ankazobe, 15.III.1930 (P); 7604, Tampoketsa, au NE de Fenoarivo, 16.III.1930 (P); 7613, Fenoarivo, 17.III.1930 (P); 7717, Ambohimalaza, près Ankazobe, 29.III.1930 (P); 8206, Bekodoka, 17.IX.1930 (P); 14343, Tampoketsa, Ankazobe, 29.IV.1943 (P); 16770, Zahamana, 23.III.1941 (P); 17600, Antsahapandrano, Ankaratra, 9.IV.1942 (P); 17918, environs de Moramanga, 8.VII.1942 (P); 18358, Lakato, distr. de Moramanga, 5.IX.1942 (P); *Fischer 34*, inselberg Lohavohitra near Andranovelona, 26.III.1993 (BONN); 202, Ambalamanaka, S of Ambositra, secondary grassland within mountain rain forest, 29.III.1993 (BONN); 410, Ranomafana National Park, 18.III.1991 (BONN); 487, lac Mantasoa ca. 3-4 km S Ambatolaona, lake shore, 17.IV.1993 (BONN); 492, rock plateau W Sambaina, ca. 33 km E of Antananarivo, 17.IV.1993 (BONN); *Forsyth Major 361*, Ambohimombo forest, 21.I.1895 (BM); *Humbert 12712*, vallée moyenne du Mandrare, près Andabolava, Mt Vohitrotsy, XII.1933 (P); *Humbert & Capuron 24978*, montagnes au N de Mangindrano (Haute Maevarano) jusqu'aux sommets d'Ambohimirahanvavy, 19.I-12.II.1951 (P); *Jard. Bot. Tananarive 19-2*, Tsimbazaza, 10.V.1935 (P); *Lantz s.n.*, Ampasenambe, VI.1881 (P); *Peltier 16*, lac

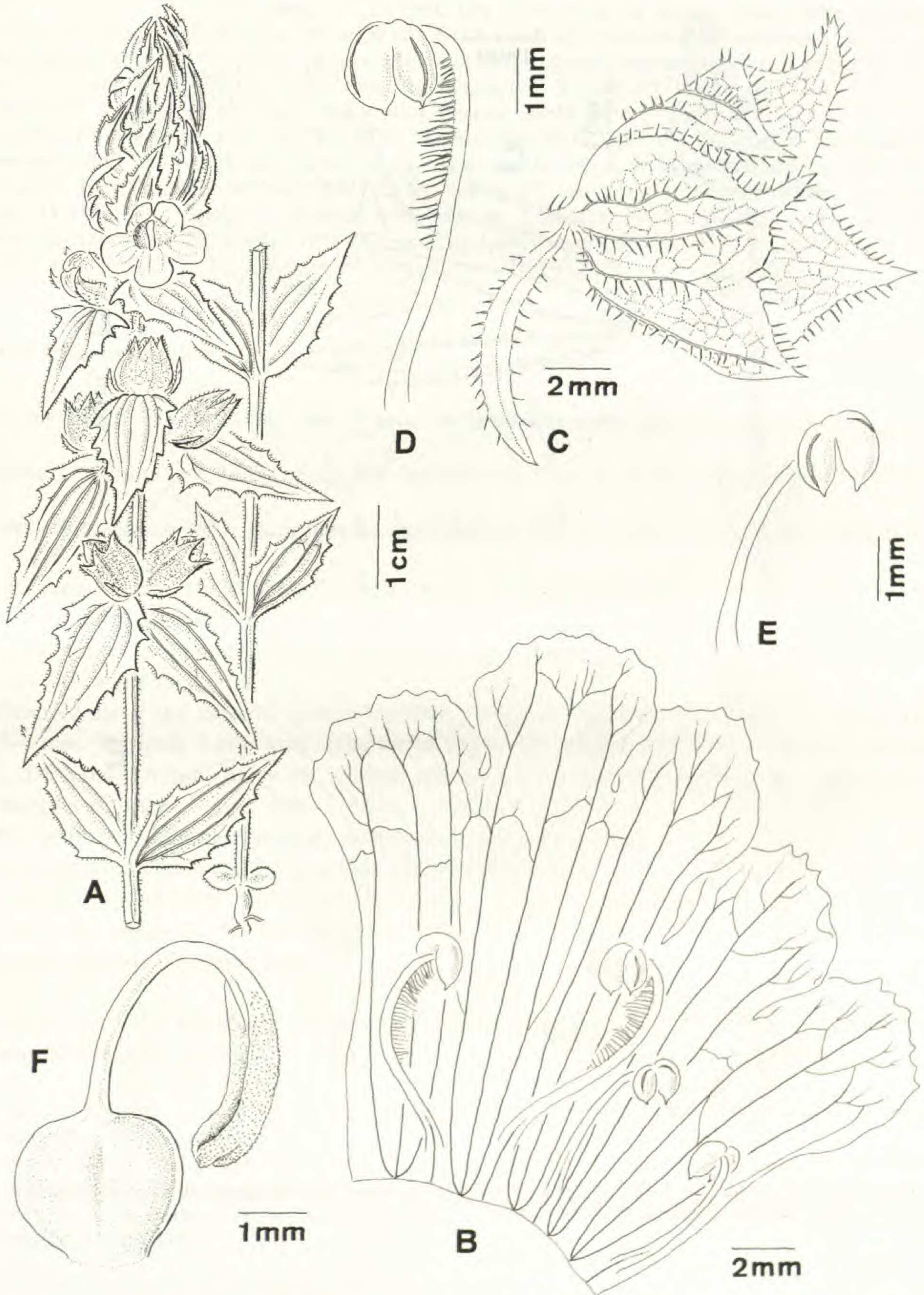


Fig. 4.—*Alectra sessiliflora*: A, habit; B, dissected corolla; C, calyx with bracteole; D, abaxial stamen; E, adaxial stamen; F, ovary. All from Fischer 410.

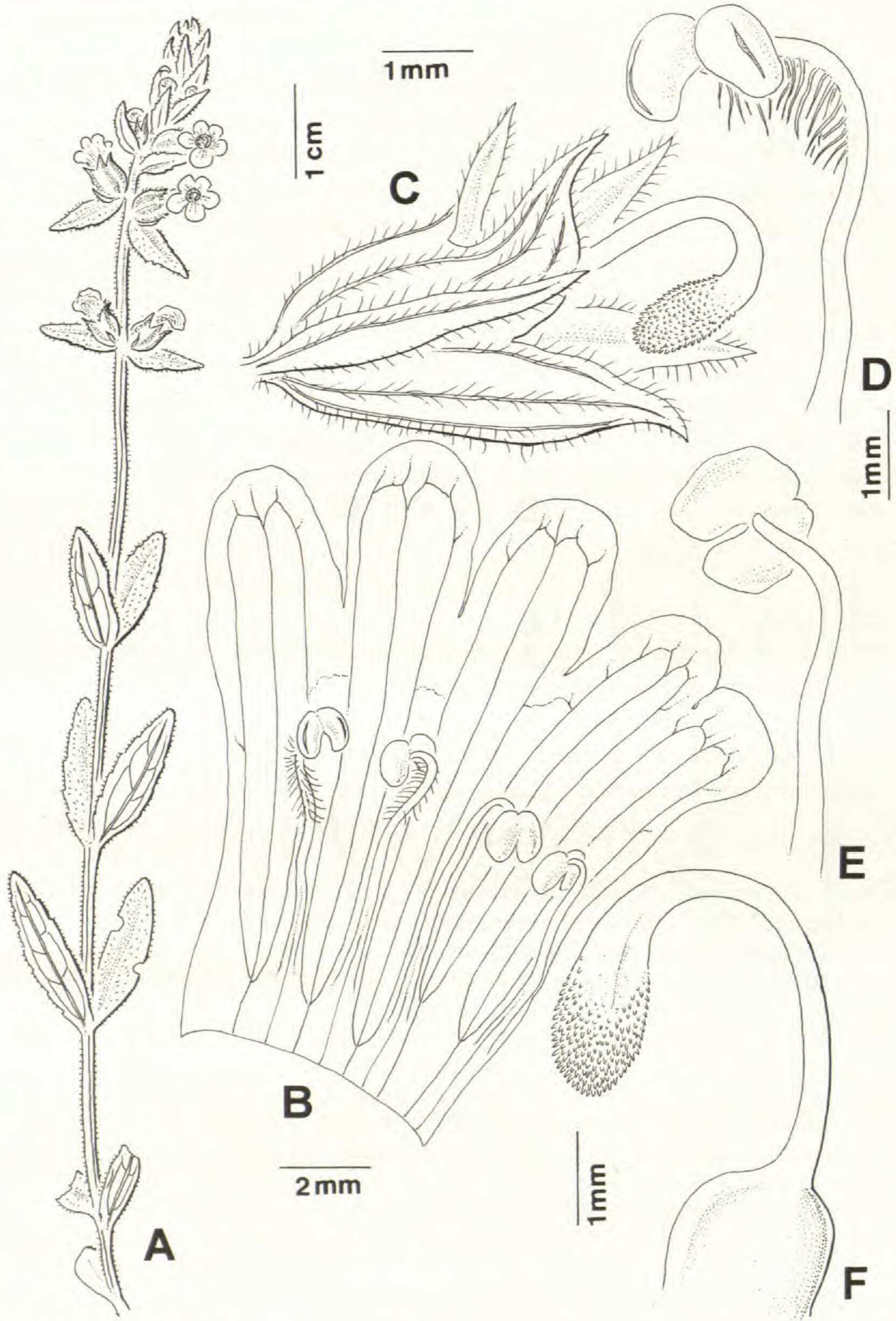


Fig. 5.—*Alectra hildebrandtii*: A, habit; B, dissected corolla; C, calyx with bracteole; D, abaxial stamen; E, adaxial stamen; F, ovary. All from *Hildebrandt 3871*.

Alaotra, 11.V.1952 (P); 3051, Isalo, 13.IV.1961 (P); *Perrier de la Bâthie* 1094, sable de Menavava, VIII.1900 (P); 8436, Maevatanana, VII.1909 (P); 8437, bords de l'Ambohatra (Sambirano), sur les alluvions du Maevarano, VII.1909 (P); 8438, plaines alluviales env. d'Ampasimentera (rizières), VIII.1905 (P); 8451, Bemarivo, Boina, VIII.1906 (P); 18553, env. de Tananarivo, V.1928 (P); *Prince d'Orléans* 822, s.loc., s.d. (P); *Réserves Naturelles*: RN 5652 Rakotovao, Soalala, 30.IX.1953 (P); RN 6314, Marovato, Ambanja, 12.IV.1954 (P); RN 6316, ibid. (P); RN 7336, Ambalavao, 28.IV.1955 (P); RN 10510, Menavahatra, distr. Ambatondrazaka, 28.IV.1955 (P); *Schofield* 25, Antsiaka, 56 km E of Mandritsara, 6.IX.1968 (K); *Scott-Elliot* 2407, Fort Dauphin, IV.1890 (BM, K, P); *Seyrig* 670, environs d'Ampandrandava, entre Bekily et Tsivory, IV.1943 (P); *Viguié & Humbert* 198, env. de Tamatave, 20.IX.1912 (P); 198A, ibid. (P); 427, environs de Tamatave, 27.IX.1912 (P); 457, prov. d'Andovoranto, distr. Anivorano, Brickaville, 4.X.1912 (P); 504, ibid. 5.X.1912 (P); *Waterlot* 470, Tananarive, III.1922 (P).

Alectra hildebrandtii E. Fischer, *sp. nov.*

Alectra perrieri Bonati, Bull. Soc. Bot. France 74: 96 (1927), nom. nud.

Alectra sessiliflora et *A. lurida affinis*, sed racema laxa, foliis lanceolatis obtusis et thecis obtusis differt.

TYPE.—*Hildebrandt* 3871, Nord-Betsileo auf feuchten Wiesen, I.1881 (holo-, P; iso-, BM, K).

Erect annual herb, 19-34 cm tall, stems simple or rarely branched with 1-2 pairs of paracladia, hispid with retrorse hairs. Leaves sessile, opposite, broadly to narrowly lanceolate, 16-23 × 4-5 mm, subentire or crenate, obtuse, appressed or subappressed to stem, hispid on upper face, glabrous on lower face.

Inflorescence a lax raceme, bracts leaf-like (frondate to frondobracteate), the lower pair 10-12 × 3-4 mm. Pedicels 1 mm long. Bracteoles linear lanceolate, equalling or slightly shorter than calyx, 3.5 × 0.4-0.5 mm, hairy on margin and nerves. Calyx 4.5-5 mm long, ciliate on nerves and margins of lobes, calyx tube 2-3 mm long, free sepal lobes 2.5-3 mm long, subequal, triangular, acute. Corolla pale yellow, with reddish-purple venation, 8-9 mm long, corolla tube 5.5-6.5 mm long, free petals ca. 2.5 mm long. Stamens subequal, abaxial filaments bearded, 3-3.5 mm long, anthers 1 mm long, anther not apiculate. Ovary 1.5 mm long, style and stigma clavate, horseshoe-like recurved, 6.5 mm long, included in the corolla.

Capsule globose, 4-5 mm long.

Swamps and wet grassland. An endemic species known only from the Central Plateau of Madagascar.—Fig. 3, 5, 10.

MATERIAL STUDIED.—*Baron* 917, Central Madagascar (K); 1895, Central Madagascar (K, P); 6786, Central Madagascar (K); *Benoist* 1674, Manjakatempo, 19.XII.1951 (P); *Bosser* 18769, col des Tapias, s.d. (P); *Forsyth-Major* 361, Ambohimombo Forest, 25.I.1895 (K); 638, Mt Antely above Ambositra, 1.XII.1894 (K); 691, ibid. 4.XII.1894; *Hildebrandt* 3871, Nord-Betsileo auf feuchten Wiesen, I.1881 (BM, K, P); *Perrier de la Bâthie* 12428, Mt Vohitrakadaly, tourbières, II.1919 (P); *Scott-Elliot* 2114, forest near Angalampera, 1890 (BM).

Alectra ibityensis E. Fischer, *sp. nov.*

Haec species differt ab Alectra sessiliflora foliis orbiculatis, floribus minoribus et staminibus valde inaequalibus staminibus adaxialibus distincte minoribus.

TYPE.—*Fischer 54*, Ibity mountains ca. 20 km S of Antsirabe, on quartzit rocks, 27.III.1993 (holo-, P).

Erect annual (perennial?) herb, 4.5-15 cm tall, stems simple or rarely branched with 1 pair of paracladia, hispid with retrorse hairs. Leaves subsessile to shortly petiolate, opposite, alternate within inflorescence, orbicular, 9-18 × 9-18 mm, subentire or slightly crenate, obtuse, rounded to cordate at base, hispid on upper face to glabrous on lower face, petiole 1-2 mm long. Inflorescence a lax dense raceme, bracts leaf-like (frondate to frondobracteate), the lower pair 12 × 15 mm. Pedicels 1 mm long. Bracteoles linear-lanceolate, equalling or slightly shorter than calyx, 4-5 × 0.5 mm, ciliate. Calyx 5.5 mm long, ciliate on nerves and margins of lobes, calyx tube 3.5 mm long, free sepal lobes 2 mm long, subequal, triangular, acute. Corolla pale yellow, 9 mm long, corolla tube 5 mm long, free petals 2.5 (upper lip) to 4 mm (lower lip) long. Stamens unequal, longer abaxial filament bearded, 3 mm long, anthers with unequal thecae, the longer 1.2 mm and the shorter 1 mm long, filament of adaxial stamens 1.5-1.6 mm long, with 0.8 mm long thecae, anther thecae apiculate.

Ovary 1.7 mm long, style and stigma clavate, horseshoe-like recurved, 5.9-6 mm long, included in the corolla.

Capsule globose, 3-4 mm long.

On quartzite rocks with *Pachypodium brevicaule* Bak. and *Uapaca bojeri* Baill. An endemic species known only from Ibity and Itremo mountains.—Fig. 3, 6, 10.

MATERIAL STUDIED.—*Fischer 54*, Ibity mountains ca. 20 km S of Antsirabe, on quartzit rocks, 27.III.1993 (P); *Jard. Bot. Tananarive 4767*, Mt Tsitondroina, 15.IV.1941 (P); *Mabberley 759*, Fianarantsoa Prov., near Morondava-Ambatofinandrahana road, col d'Itremo, Itremo mountains, 23.III.1971 (K); *Peltier 2097*, massif de l'Ibity, 19.III.1960 (P).

Alectra humbertii E. Fischer, *sp. nov.*

Differt ab Alectra sessiliflora foliis linealibus, indumento ex pilis multicellulatis, filamentis glabris et thecis obtusis. Ab Alectra lineare floribus minoribus et thecis obtusis valde differt. Ab Alectra rigida calyce glabro et thecis obtusis differt.

TYPE.—*Viguier & Humbert 1705*, province du Vakinankaratra, district d'Ambatolampy, Mt Tsiafajovana, massif d'Ankaratra, 28.XI.1912 (holo-, P).

Erect annual herb, 21-46 cm tall, stems simple or rarely branched with 1 pair of paracladia, hispid with retrorse hairs. Leaves sessile, opposite, linear, 25-42 × 2-4 mm, subentire or with 2-3 coarse teeth, acute, hispid with pluricellular hairs on upper face to glabrous on lower face.

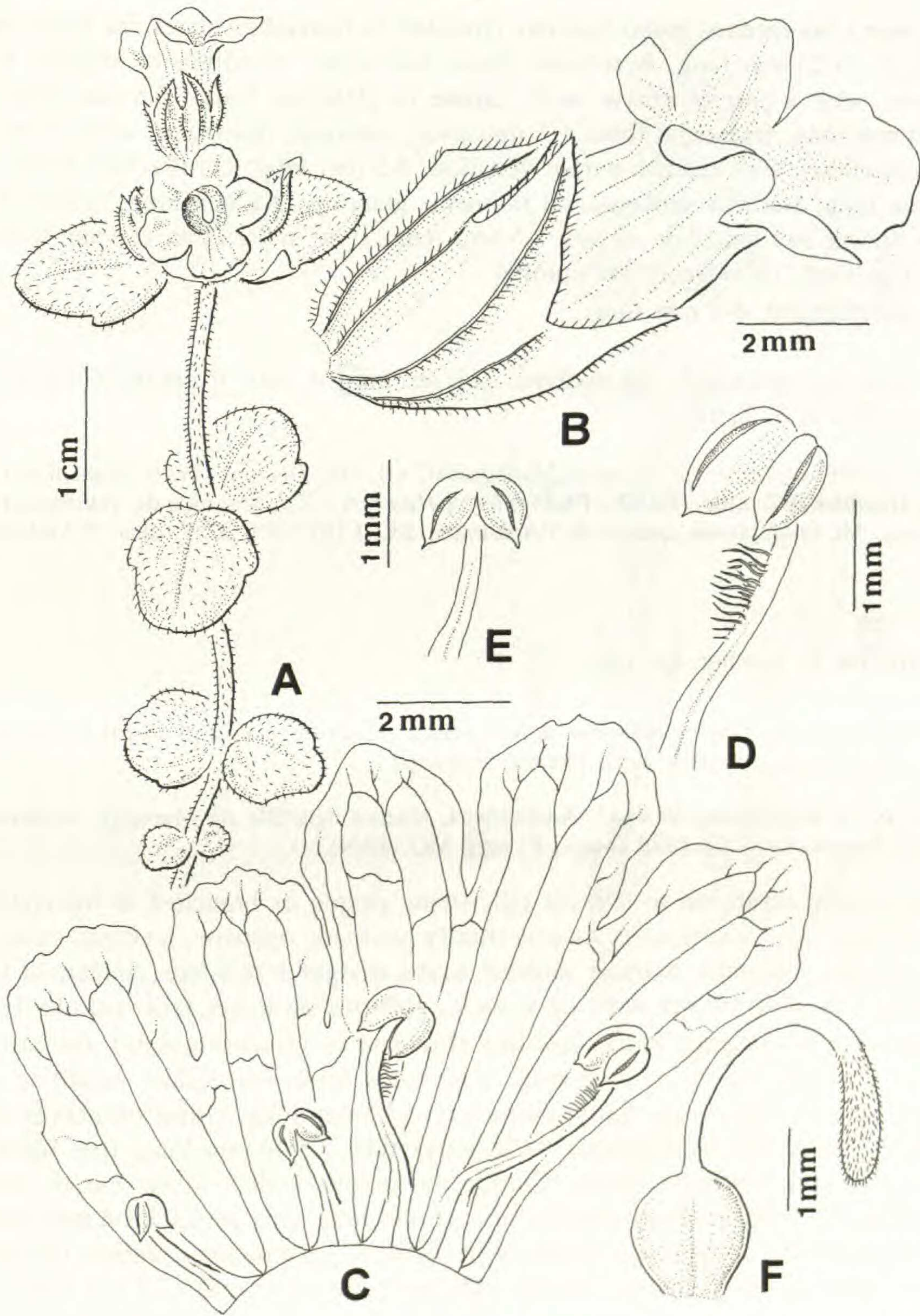


Fig. 6.—*Alectra ibityensis*: A, habit; B, flower; C, dissected corolla; D, abaxial stamen; E, adaxial stamen; F, ovary. All from Fischer 54.

Inflorescence a lax raceme, bracts leaf-like (frondate to frondobracteate), the lower pair $22 \times 2-3$ mm. Pedicels 1(-2) mm long. Bracteoles linear lanceolate, equalling or slightly longer than calyx, 61 mm, with a pair of coarse teeth, ciliate to glabrous. Calyx 5.5 mm long, glabrous, calyx tube 4 mm long, free sepal lobes 1.5 mm long, subequal, triangular, acute. Corolla yellow to orange, sometimes with reddish-purple venation, 8.5 mm long, corolla tube 6 mm long, free petals 2.5 mm long. Stamens subequal, all filaments glabrous, 2.5 mm long, anthers 0.8-0.9 mm long, anther thecae not apiculate. Ovary 2.5 mm long, style and stigma clavate, horseshoe-like recurved, 8 mm long, included in the corolla.

Capsule subspherical, 8-9 mm long.

Swamps and wet grassland. An endemic species known only from the Central Plateau of Madagascar.—Fig. 2, 3, 7, 10.

MATERIAL STUDIED.—*Baron s.n.*, Central Madagascar, s.d. (P); *Decary 17198*, Manankazo, Ankazobe, 3.I.1942 (P); *Humblot 622*, s.loc., s.d. (K, P); *Viguiet & Humbert 1705*, province du Vakinankaratra, district d'Ambatolampy, Mt Tsiafajavona, massif de l'Ankaratra, 28.XI.1912 (P); *1737*, distr. d'Ambatolampy, s.d. (P).

Alectra fruticosa E. Fischer, *sp. nov.*

Ab omnibus speciebus generis Alectrae differt habitu fruticoso, pedicello distincto usque ad 12 mm longo et floribus purpureis macula lutea centrali instructis.

TYPE.—*Miller & Randrianasolo 4463*, Antsiranana, réserve naturelle du Marojejy, western slopes and summit of Mt Beondroka, 26.X.1989 (holo-, P; iso-, MO, TAN).

Perennial woody shrub, up to 150 cm tall, stems simple or branched at innovations, hispid with retrorse hairs, later glabrescent. Leaves shortly petiolate, opposite, leathery, ovate to broadly lanceolate, $18-32 \times 7-12$ mm, coarsely toothed, acute, margin \pm revolute, cuneate at base, hispid on upper face with pluricellular hairs on a socle, glabrous on lower face, petiole 4-5 mm long.

Inflorescence a lax raceme, bracts leaf-like (frondate to frondobracteate), the lower pair $12-20 \times 6-9$ mm. Pedicels up to 12 mm long. Bracteoles linear-lanceolate, equalling or slightly shorter than calyx, 6.5×1.5 mm, hairy. Calyx 11.5-13.5 mm long, ciliate on nerves and margins of lobes, hairs multicellular with distinct socle, calyx tube 7.5-10 mm long, free sepal lobes 3.5-4 mm long, subequal, triangular, acute. Corolla red purple, yellow in the mouth, with reddish-purple venation, 18.5-19 mm long, corolla tube 13 mm long, free petals 5.5-6 mm long. Stamens subequal, all filaments glabrous, 5.5 mm long, anthers 1.6 mm long, anther thecae apiculate. Ovary 3 mm long, style and stigma clavate, horseshoe-like recurved, 12.5 mm long, included in the corolla.

Capsule globose, 11-12 mm long.

Lichen forest and open wind-swept ridges, heath vegetation near the summits and montane forest from 830-1850 m. An endemic species known from the Marojejy massif.—Fig. 2, 3, 8, 10.

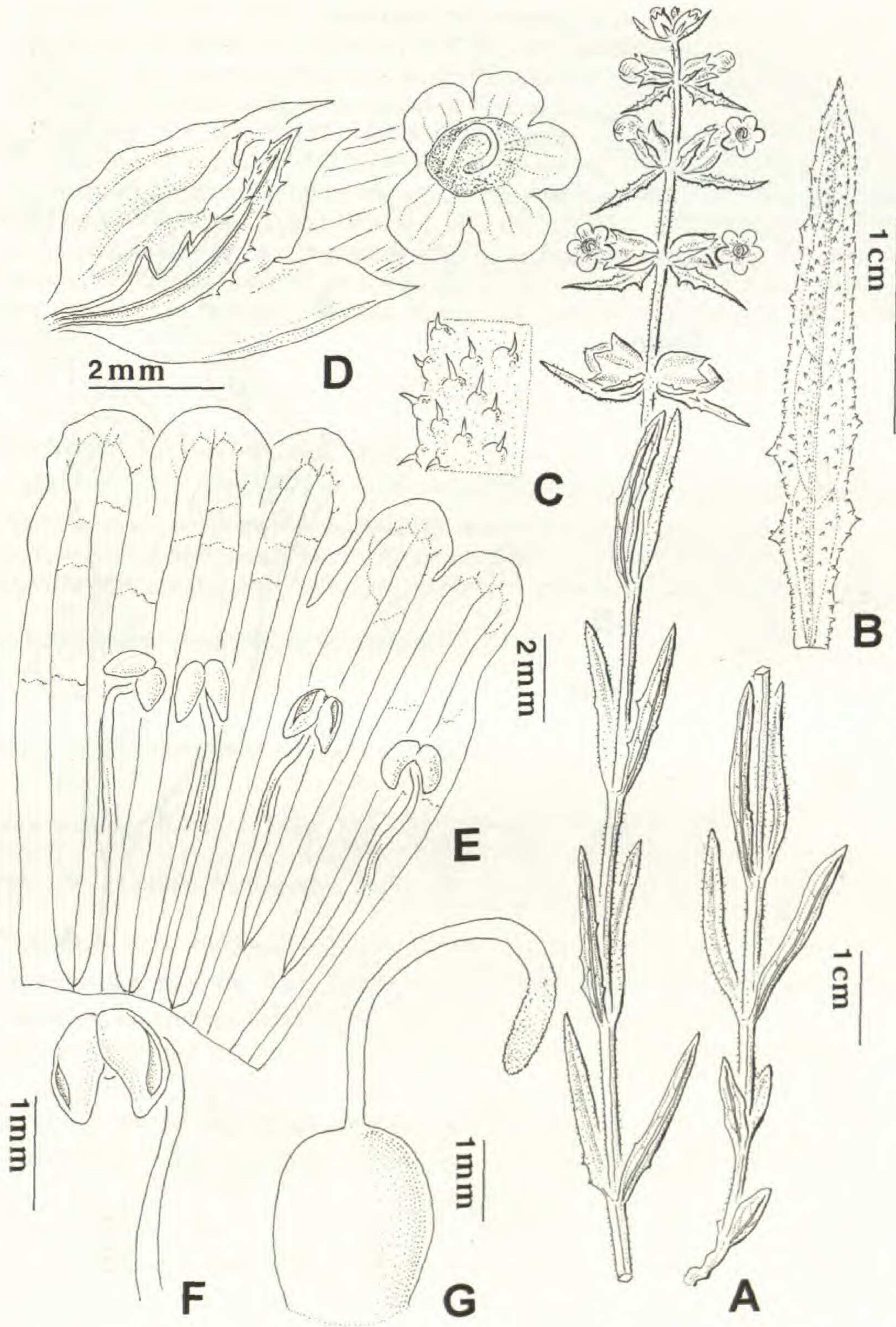


Fig. 7.—*Alectra humbertii*: A, habit; B, leaf; C, leaf margin with hairs; D, flower; E, dissected corolla; F, adaxial stamen; G, ovary. All from *Viguier & Humbert 1705*.

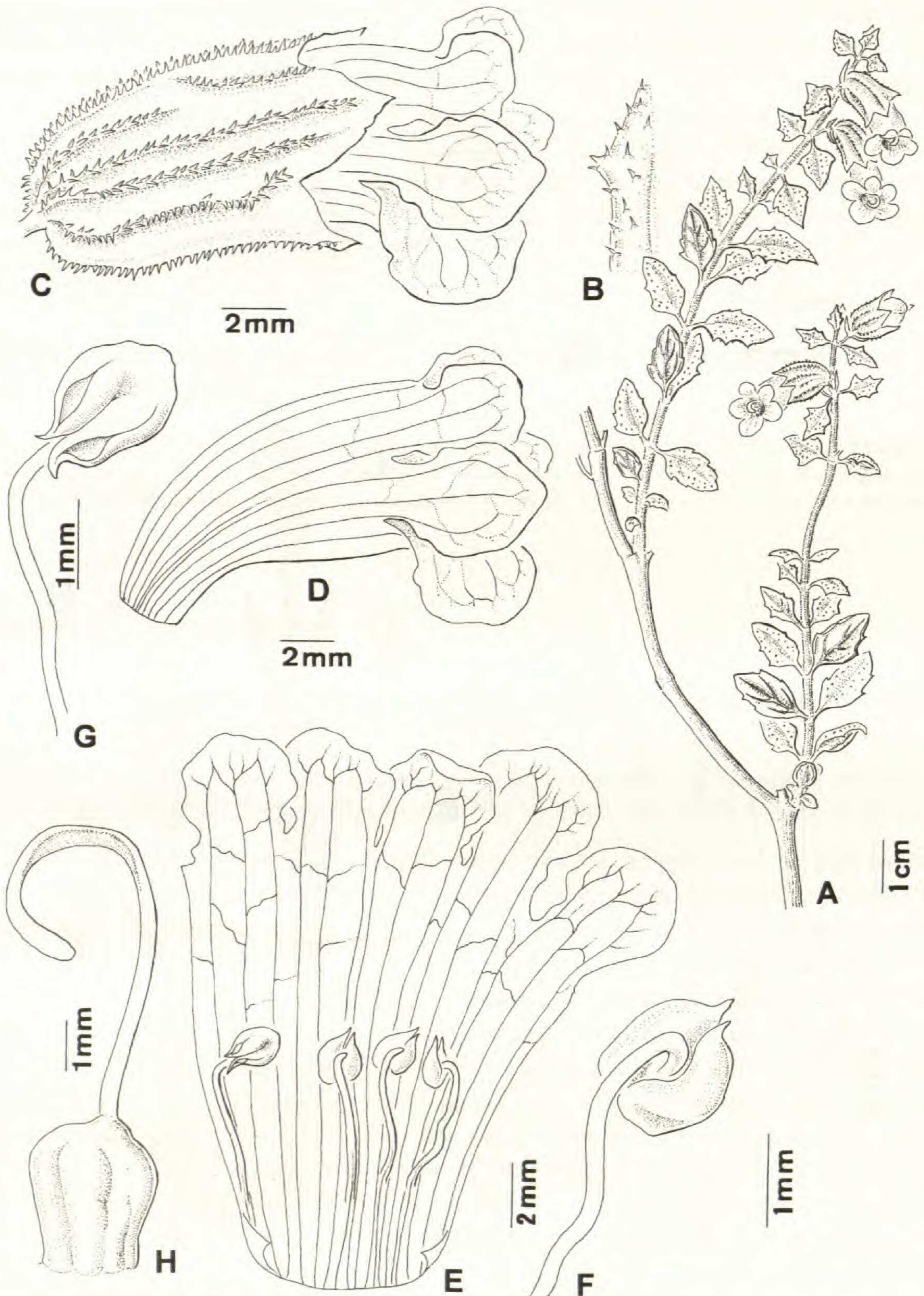


Fig. 8.—*Alectra fruticosa*: A, habit; B, leaf margin with hairs; C, flower; D, corolla; E, dissected corolla; F, abaxial stamen; G, adaxial stamen; H, ovary. A-B from Miller & Randrianasolo 4463, C-H from Humbert 22667.

MATERIAL STUDIED.—*Cours* 3328, montagne d'Ambatosoratra, 7.I.1949 (P); 3822, Anjanaharibe, 23.XII.1950 (P); *Deroin & Badré* 41, Marojejy RN 12, rive gauche de la Manantenina, versant sud du Beondroka, 12.XI.1989 (P); *Humbert* 6941, bassin de l'Itomampy (Sud-Est), Mt Papanga près de Befotaka, 2-3.XII.1928 (P); 22667, sommet oriental du massif de Marojejy, à l'ouest de la Haute Manantenina, affluent de la Lokoho, 17-20.XII.1950 (P); 23583, vallée de la Lokolo, Mt Beondroka au N de Maroambihy, 17-22.III.1949 (P); *Humbert & Capuron* 24329, vallée inférieure de l'Androranga, affluent de la Bemarivo (Nord-Est) aux environs d'Antongondriha, massif de Betsomanga, 17-20.XI.1950 (P); 24669, massif de l'Anjanaharibe à l'ouest d'Andapa, 10.XII.1950–3.I.1951 (P); *Humbert & Cours* 22864, vallée de la Lokoho (Nord-Est), Mt Ambatosoratra au N d'Ambalavoniho et de Belaoka, 4-8.I.1949 (P); *Jacquemin H 602 J*, réserve du Marojejy, sentier du Camp II au Camp III, 28.X.1967 (P); *Miller & Randrianasolo* 4463, Antsiranana, réserve naturelle de Marojejy, western slopes and summit of Mt Beondroka, 26.X.1989 (MO, P, TAN).

PSEUDOMELASMA E. Fischer, *gen. nov.*

Differt ab Alectra calyce postfloraliter accrescenti, pedicellis longis, thecis lanceolatis acutisque et stylo et stigmate non recurvato. A Melasma differt corolla persistente et filamentis barbatis. Ab omnibus generibus ex affinitate Alectrae florescentia post anthesim proliferata et forma ovato-oblonga seminum valde differt.

TYPUS.—*Pseudomelasma pedicularioides* (Baker) E. Fischer.

Pseudomelasma pedicularioides (Baker) E. Fischer, *comb. nov.*

Alectra pedicularioides Baker, J. Linn. Soc., Bot. 20: 214 (1884).

TYPE.—*Baron* 1847, Central Madagascar (holo-, K; iso-, P).

Perennial suffrutex with subterranean woody rhizome up to 5-6 cm in diameter. Inflorescence a reduced, umbella-like raceme with small scaly bracts, which after anthesis proliferates and produces an erect or ascending leafy shoot, 5-9 cm tall. Leaves opposite ovate-lanceolate, subentire to slightly crenate, 12 × 5-8 mm, obtuse. Stem and leaves densely tomentose. Pedicel 18-20 mm long, tomentose, growing in fruit up to 38 mm. Bracteoles lanceolate, 7 × 1 mm, tomentose. Calyx up to 14 mm long, accrescent in fruit to 17-18 mm, hairy only on the 10 main-nerve, calyx tube 7.5-9 mm long, free sepals 4-5.5 mm long, triangular acute. Corolla yellow, 20-21 mm long, outside the main nerves pilose and the free petals with glandular hairs, persistent in fruit. Corolla tube 9-10(12) mm, free petals 8.5-11 mm long, ± oblong, obtuse. Stamens subequal, all filaments bearded, 6.5-7 mm long, anthers 2.3 mm long, anther with narrow apiculate thecae. Ovary 4.5 mm long, style and stigma clavate, ± straight, pilose, 8-9 mm long.

Capsule spherical to globose, 16-17 mm long.

Grassland on rocky slopes. An endemic species known only from Ankaratra and Andringitra mountains.—Fig. 2, 9, 11.

MATERIAL STUDIED.—*Baron* 1847, Central Madagascar (K, P); *Decary* 13839, Vavavato (Betafo), 25.XI.1938 (P); *Humbert* 3644, massif d'Andringitra (Iratsy), vallées de la Riambava et de l'Antsifotra,

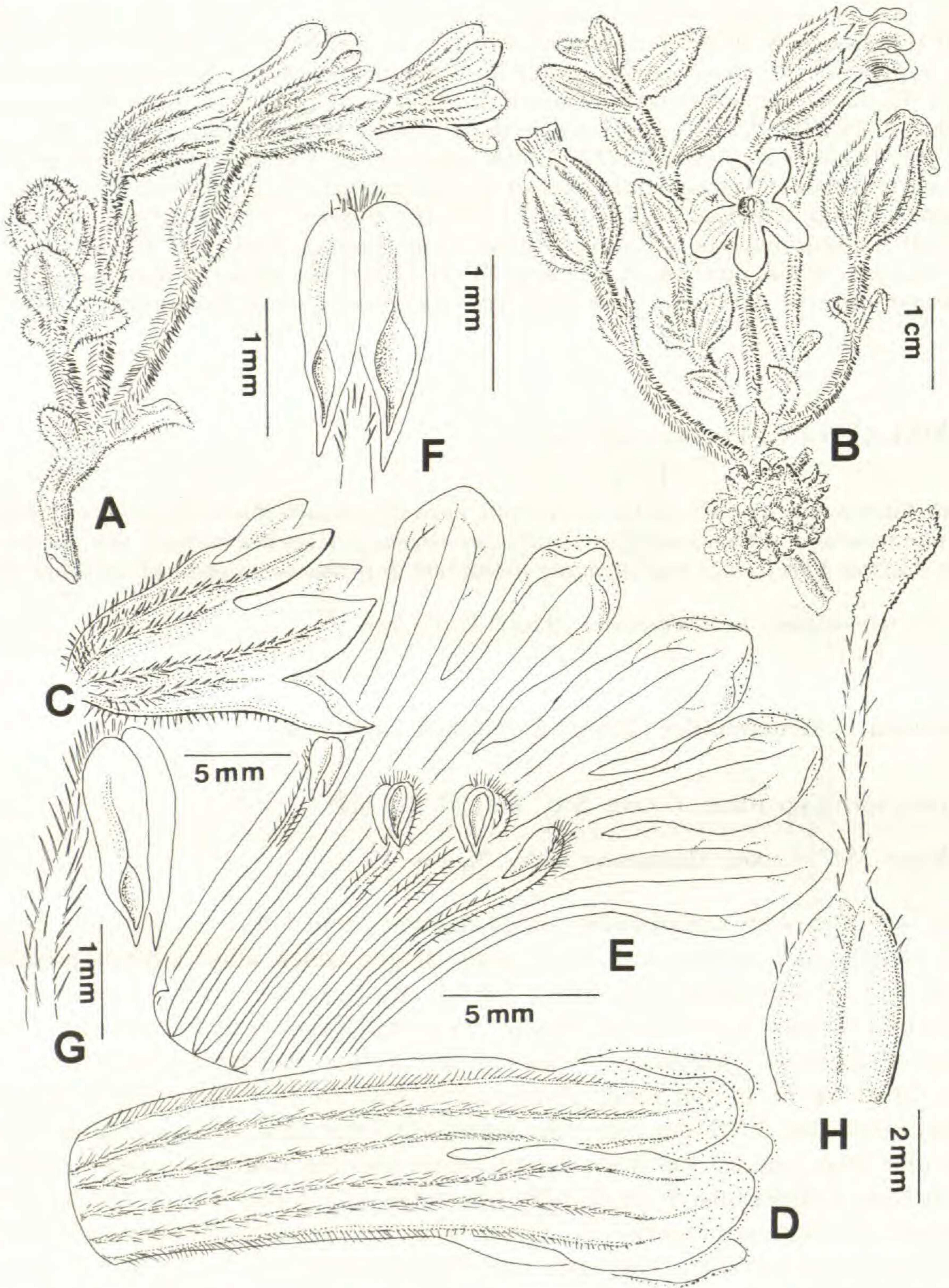


Fig. 9.—*Pseudomelasma pedicularioides*: A-B, habit; C, calyx; D, corolla; E, dissected corolla; F, abaxial stamen; G, adaxial stamen; H, ovary. A, C-H from *Decary 13839*; B from *Humbert 3644*.

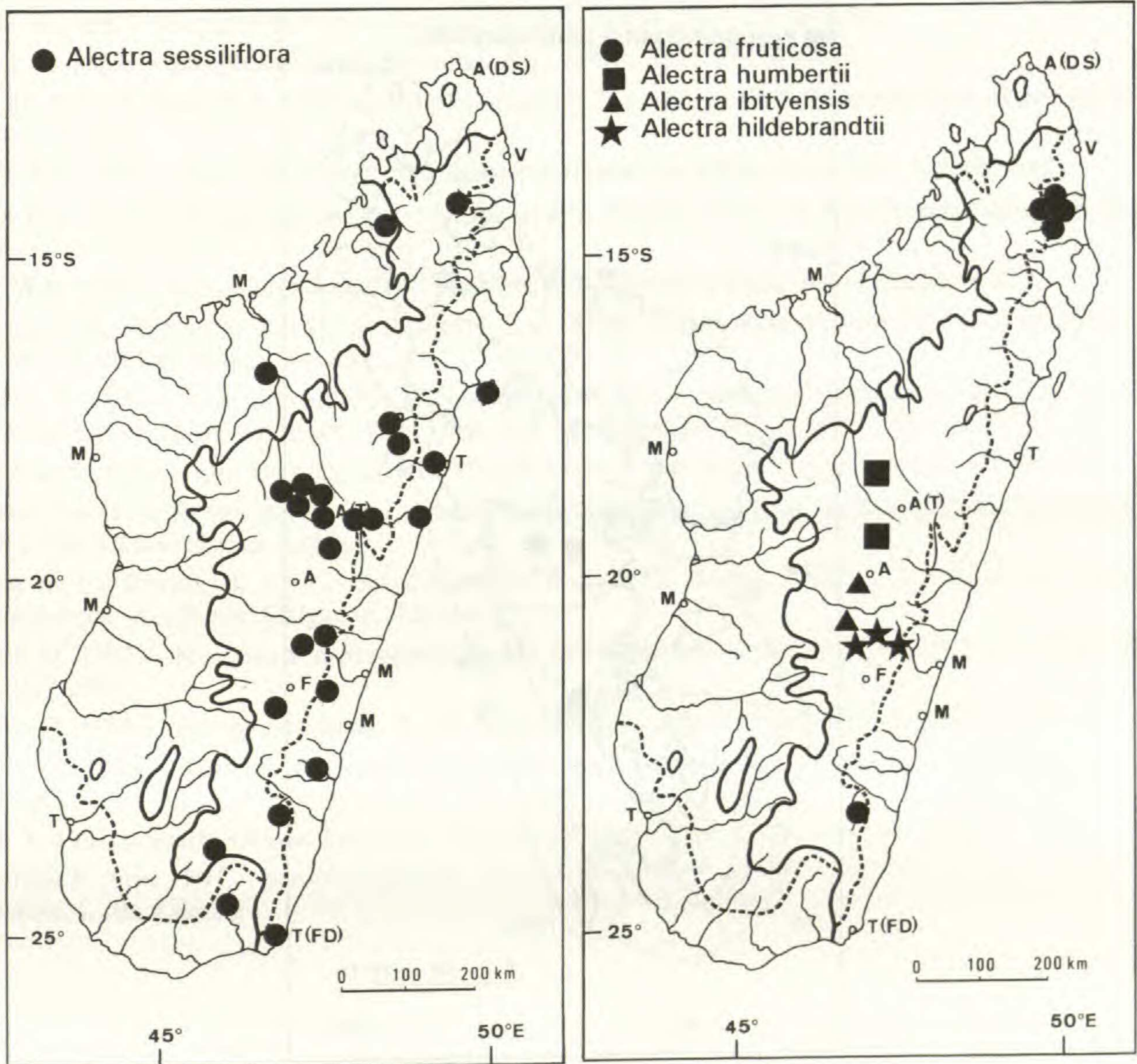


Fig. 10.—Geographic distribution of *Alectra* in Madagascar.

27.XI-8.XII.1924 (BM, K, P); *Réserves Naturelles*: RN 9937 Rakotovao, Sendrisoa, Ambalavao, 13.I.1958 (P); *Viguier & Humbert 1692*, Ambatolampy, pentes herbeuses sur le flanc est de l'Ankaratra en dessous de Tsiafajavona, 28.XI.1912 (P).

ACKNOWLEDGMENTS.—I should like to thank the curators of the following herbaria for the loan of specimens: B, BM, K, P, UPS. For the possibility to study the Scrophulariaceae for the "Flore de Madagascar et des Comores", I am deeply indebted to Prof. Dr. Ph. MORAT. I wish to express my gratitude to Drs. F. BADRÉ, J. JÉRÉMIE and J.-N. LABAT, who gave me invaluable information on localities in Madagascar. Thanks are due to Prof. Dr. W. BARTHOLOTT (Bonn) and two reviewers for important comments on the manuscript. This study would have been impossible without two fieldtrips to Madagascar in 1991 and 1993, which enabled me to study critical groups of Scrophulariaceae in the field. The financial support by the Deutsche Forschungsgemeinschaft within the project "Vegetation of inselsbergs" in the emphasis

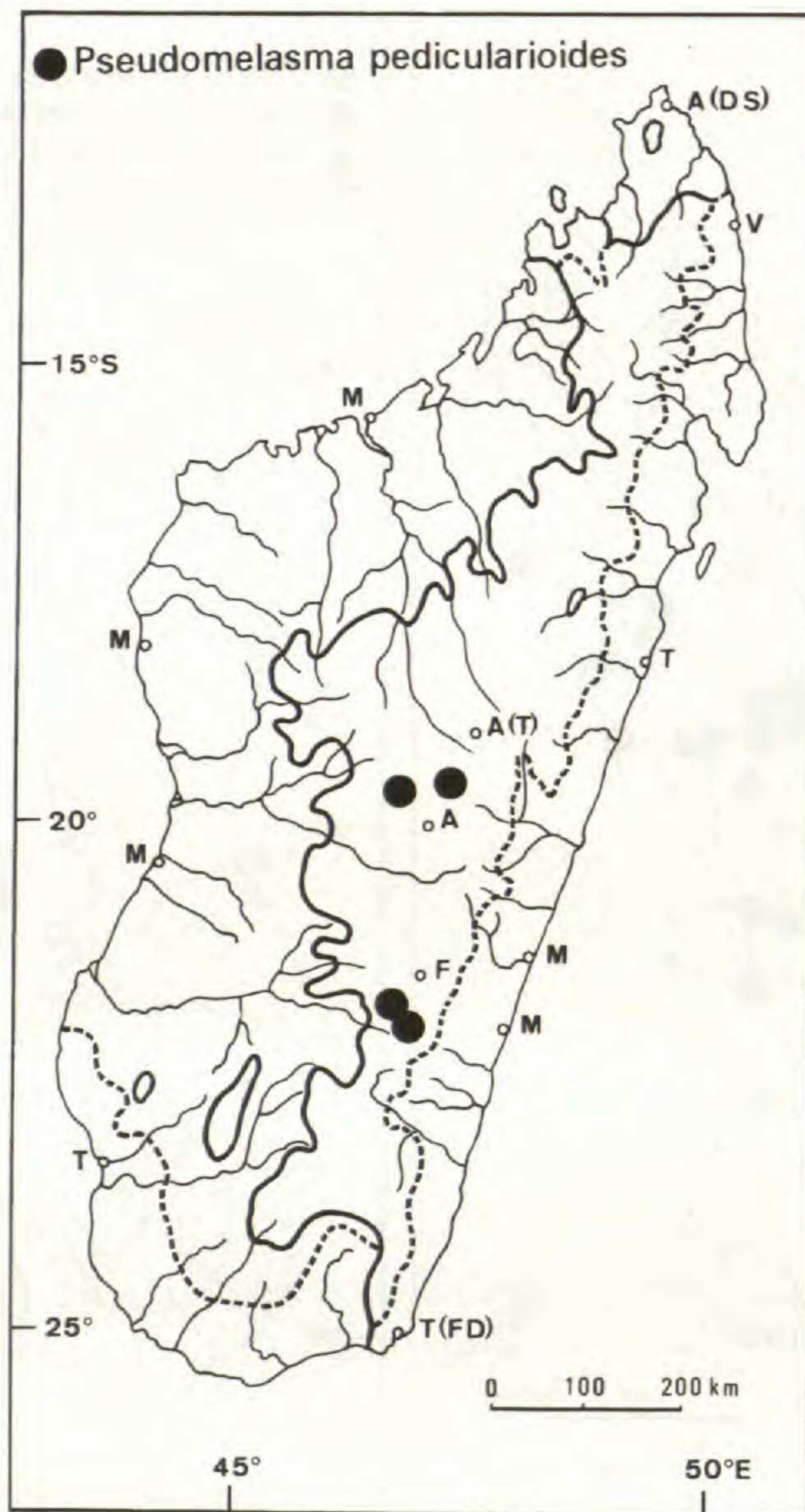


Fig. 11.—Geographic distribution of *Pseudomelasma* in Madagascar.

program “Mechanisms for maintenance of tropical diversity” is gratefully acknowledged. My special thanks go to my colleagues, who accompanied me on these visits: M. BIRGEL, F. DITSCH, I. MEUSEL, I. THEISEN, W. HÖLLER (Bonn) and Dr. P. SCHÄFER (Mainz).

REFERENCES

- BENTHAM G. 1846.—Scrophulariaceae: 186-586, in A. de Candolle, *Prodromus Systematis Naturalis Regni Vegetabilis* 10.
- BONATI G. 1927.—Scrofulariacées de Madagascar (Collections Perrier de la Bâthie, Decary, Waterlot, Viguier et Humbert, d'Alleizette). *Bull. Soc. Bot. France* 74, 5^e série, III: 86-101.

- ENGLER A. 1897.—Scrophulariaceae africanae II. *Bot. Jahrb. Syst.* 23: 497-517.
- ENGLER A. 1922.—Scrophulariaceae africanae. *Bot. Jahrb. Syst.* 57: 609-614.
- HEMSLEY W.B. & SKAN S.A. 1906.—Scrophulariaceae: 261-462, in W.T. Thiselton-Dyer, *Flora of Tropical Africa* 4, 2.
- HEPPER F.N. 1960.—New and noteworthy Scrophulariaceae in Afrika. *Kew Bull.* 14: 402-416.
- HEPPER F.N. 1963.—Scrophulariaceae: 352-374, in F.N. Hepper, *Flora of West Tropical Africa* 2, 2nd edition.
- HIERN W.P. 1904.—Scrophulariaceae: 121-422, in W.T. Thiselton-Dyer, *Flora Capensis* 4, 2.
- HOLMGREN P.K, HOLMGREN N.H. & BARNETT L.C. 1990.—*Index Herbariorum. Part I: The Herbaria of the World*, eighth edition. Utrecht.
- HUMBERT H. 1955.—Une merveille de la Nature à Madagascar. Première exploration botanique du Massif de Marojejy et de ses satellites. *Mém. Inst. Sci. Madagascar, Sér. B, Biol. Vég.*, 6: 1-210.
- MELCHIOR H. 1941.—Die Gattung *Alectra* Thunb. *Notizbl. Bot. Gart. Berlin-Dahlem* 15: 423-447.
- MERXMÜLLER H. & ROESSLER H. 1967.—126. Scrophulariaceae: 1-59, in H. Merxmüller, *Prodromus einer Flora von Südwestafrika*. Lehre.
- PERRIER DE LA BÂTHIE H. 1931.—Scrophulariaceae d'après G. Bonati: 5-13, in *Catalogue des Plantes de Madagascar*. Academie Malgache, Tananarive.
- PHILCOX D. 1987.—New Taxa in Scrophulariaceae from Southern Tropical Africa. *Bol. Soc. Brot.*, Sér. 2, 60: 267-270.
- PHILCOX D. 1990.—Scrophulariaceae: 1-179, in E. Launert & V.G. Pope, *Flora Zambesiaca* 8, 2.
- TROUPIN G. 1949.—Révision des espèces congolaises du genre *Alectra* Thunb. *Bull. Jard. Bot. État* 19: 271-283.
- VISSER J. 1981.—*South African Parasitic Flowering Plants*. Cape Town, Johannesburg.
- WETTSTEIN R. VON 1891.—Scrophulariaceae: 39-107, in A. Engler & K. Prantl, *Die natürlichen Pflanzenfamilien* 4, 3b. Leipzig.

Trois nouvelles espèces de *Inga* (Mimosaceae) des Guyanes et du Brésil

O. PONCY

Résumé : Trois nouvelles espèces du genre *Inga* (Mimosaceae) de la flore guyanaise (Guyana, Suriname, Guyane française) sont décrites : *Inga albicoria*, *I. mitaraka* et *I. nouragensis*. Toutes trois sont arborescentes, et se rattachent à la section *Bourgonia*, renforçant ainsi l'importance de ce groupe du genre, particulièrement bien diversifié dans les Guyanes. Deux d'entre elles sont également présentes en Amazonie brésilienne.

Summary: Three new species of the genus *Inga* (Mimosaceae) are described as part of the taxonomical treatment of the family for the Flora of the Guianas (Guyana, Suriname, French Guiana): *Inga albicoria*, *I. mitaraka* and *I. nouragensis*. All three are tree species and take place in the section *Bourgonia*, thus enhancing the importance of this particular group of the genus which is highly diversified in the Guianas. Two of them also occur in Brazilian Amazonia.

Odile Poncy, Laboratoire de Phanérogamie, Muséum national d'Histoire naturelle, 16, rue Buffon, 75005 Paris, France.

La révision taxonomique des espèces du genre *Inga* (Mimosaceae) de la région guyanaise (Guyana, Suriname, Guyane française), entreprise dans le cadre du programme «Flora of the Guianas», a permis de reconnaître plusieurs nouvelles espèces. Nous décrivons ici trois d'entre elles, que leurs affinités permettent de rattacher à la section *Bourgonia*. L'une est connue seulement de Guyane française, les deux autres existent aussi au Guyana et au Brésil (Amapa, Para).

***Inga albicoria* Poncy, sp. nov. — Fig. 1.**

Species a sectione Bourgonia pertinens, sed a speciebus affinibus Inga alba et I. pezizifera, cortice haud rubro sed cremeo colore, petiolo et folii rachidi teretibus pubescentibusque, inflorescencia longiore differt.

TYPE. — *Fanshawe 1252* (= Forest Dept., FD 3988), Guyana, Groete Creek, Essequibo River, forêt secondaire, 20.IV.1943, fl. (holo-, K!; iso-, FD!, BRG!, NY!).

Arbre de taille moyenne, atteignant 25 m de hauteur et 30 cm de diamètre du tronc. Ecorce claire, blanchâtre à beige, ponctuée de lenticelles plus sombres. Rameaux brunâtres, glabres.

Feuilles composées de trois paires de folioles. Stipules de $3-4 \times 1$ mm, courbées, triangulaires dans leur partie distale, et très précocement caduques. Pétiole et rachis foliaire cylindriques ou faiblement marginés, couverts d'une pilosité dense et brune; pétiole de 1-2 cm de longueur, segments du rachis de 1,5-3 cm de longueur. Glandes foliaires très saillantes, en coupe ou en entonnoir, à ouverture circulaire de 1 mm de diamètre environ. Folioles elliptiques, celles de la paire proximale $(3-5-7 \times (1,5-2,5-3$ cm, celles de la paire distale de $7-12 \times 2,5-5$ cm; base aiguë légèrement dissymétrique; apex acuminé et apiculé; face supérieure du limbe glabre, face inférieure très finement pubescente, d'aspect velouté, pubescence plus dense sur les nervures.

Inflorescences axillaires constituées d'épis solitaires ou groupés par 2-3. Pédoncule de l'épi long de 1,5-2,5 cm, avec une bractée généralement disposée vers son milieu. Rachis de 5-7 cm de longueur portant plus de 50 fleurs sessiles ou très brièvement pédicellées. Bractées réduites (env. 1 mm de longueur), recourbées, spatulées. Bouton floral claviforme. Calice et corolle portant des poils épars et très courts. Calice très petit (1 mm de longueur), campanulé, à 5 dents très peu marquées. Corolle en entonnoir de 4-5 mm de longueur. Tube staminal exsert.

Fruit : gousse glabre d'environ $20 \times 1,5$ cm, à sutures droites ou faiblement ondulées, à valves souples, minces, ornementées de fines nervilles peu marquées. Graines 9-14, non contiguës, saillantes à maturité.

Inga albicoria est un arbre de forêt dense humide, et les matériaux réunis pour son étude montrent que cette espèce n'est probablement pas rare dans les massifs forestiers non perturbés. Curieusement, elle n'a pas été recollectée au Guyana depuis la découverte du spécimen-type, et elle n'a pas encore été répertoriée au Suriname. Mais elle est relativement abondante dans la zone d'étude de la station biologique des Nouragues en Guyane française. Trois spécimens provenant de l'Amapa et du Para (Brésil) y sont également rapportés. La répartition géographique de *I. albicoria* semble donc s'étendre au bouclier guyanais et au Bas-Amazone. Ainsi que le suggère l'épithète spécifique choisie pour ce taxon, son écorce n'est pas rougeâtre comme chez plusieurs espèces dont elle est très proche (*I. alba* (Sw.) Willd., *I. bourgoni* (Aubl.) DC. ou *I. pezizifera* Benth.). En outre, *I. albicoria* présente des affinités certaines avec *I. cylindrica* (Vell.) Mart., du Brésil méridional.

AUTRES MATÉRIELS ÉTUDIÉS. — GUYANE FRANÇAISE : *Cremers* 7541, Haute Mana, Saut Ananas, fl., 15.VIII.1981 (CAY, P); *de Granville et al.* 10961, Inini, Mont Atachi-Bacca, fr., 30.I.1989 (CAY, G, NY, P, US, VEN); *Mori & Mitchell* 18766, Saül, fl., 21.VIII.1987 (CAY, NY, P, U); *Sastre* 5709, Bassin de l'Approuague, Rivière Arataye, Saut Pararé, fl., 17.VIII.1977 (CAY, P, U); *Sastre* 5880, ibid., fl., 3.IX.1977 (CAY, P, U); *Villiers* 3729, ibid., fr., 2.III.1987 (CAY, P); *Sabatier & Prévost* 2709, Montagnes Balenfois, Station des Nouragues, fl., 11.VII.1989 (CAY, P); *Simmen* 230, ibid., fr., 15.VI.1992 (P). — BRÉSIL : *Rabelo et al.* 2786, Amapa, route Macapa-Fazendinha, fr., 21.VIII.1978 (NY); *Rabelo et al.* 3169, Macapa, Serra do Navio, fr., 4.I.1985 (NY); *Daly et al.* 1345, Para, Tucurui, fr., 14.XI.1981 (NY).